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Candida auris MOLECULAR DETECTION IN EPIDEMIOLOGICAL SURVEILLANCE SAMPLES BY OLM DIAGNOSTICS AURISID KIT

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1. INTRODUCTION

Candida auris has emerged as a resistant fungal pathogen responsible for hospital outbreaks, especially in risk care units. *C. auris* has the capacity to survive in the environment and to colonize biomedical devices as well as skin and mucosa of patients that could be implicated in maintenance of reservoirs and patient cross-infection, and therefore persistence of an outbreak.

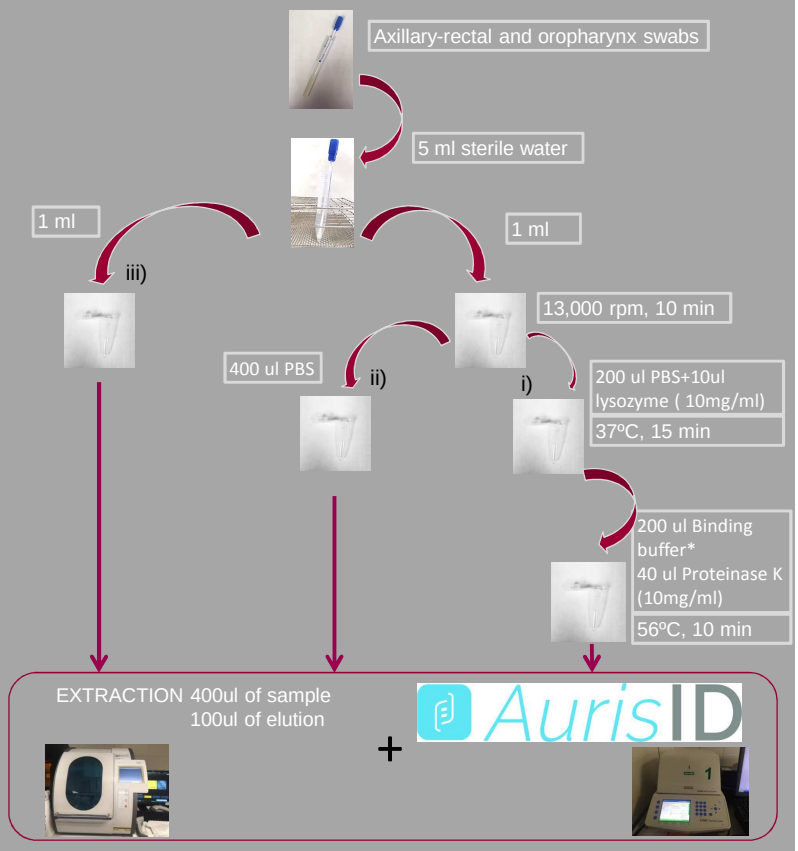
The control of *C. auris* outbreak is important because comorbidity and clinical severity of infected patients in addition to fungal resistance lead to high mortality rates and presence of frequent complications. A major point is the epidemiological surveillance of *C. auris* in colonized patients to avoid infection and cross-infections. In this setting, molecular methods are a useful tool in order to detect *C. auris* in colonized patients in a quick and easy way.

The aim of this study was to test the OLM Diagnostics AurisID kit in epidemiological surveillance samples.

2. METHODS

We performed the OLM Diagnostics AurisID kit in epidemiological surveillance samples (axillary-rectal and oropharynx swabs) of 5 patients. The samples were collected in a tube with gel Amies transport media (Deltalab®). We tested three different pre-treatment DNA extraction protocols: i) dissolve in sterile water, concentration, lysozyme (Sigma) and proteinase K (Roche) treatment ii) dissolve in sterile water and concentration iii) dissolve in sterile water. After that, DNA extraction was carried out by MagNA Pure Compact (Roche®) according to manufacturer´s instructions using DNA Blood protocol with 400ul of sample and 100ul of elution.

In addition, all the swabs were cultured in CHROMagar Candida medium (Becton Dickinson). The plates were incubated at 36ºC, 24-48 hours. Candida isolates were identified by proteomic profiling (MALDI-TOF, Bruker) according to clinical laboratory practice.



3. RESULTS

A total of 5 samples from 5 patients (4 skin-rectal and 1 oropharynx swabs) were analyzed by OLM Diagnostics AurisID. OLM Diagnostics AurisID kit showed the same results with the three different pre-treatment DNA extraction protocols in all samples. Moreover, the AurisID qPCR Kit results were positive in 4/5 patient samples and were in concordance with Candida culture results (4 patients were colonized by *C. auris* and the other one was negative).

4. DISCUSSION

C. auris is difficult to treat and to eradicate. Despite all efforts, new colonized and/or infected patients appear, that´s why this emergent resistant fungal is considered a worrisome healthcare problem.

Rapid epidemiological surveillance results are necessary to improve the clinical dealing with these patients. OLM Diagnostics AurisID kit detects *C. auris* in surveillance samples within 45 minutes of nucleic acid extraction (without pre-treatment protocol), thus it seems to be an interesting tool to improve quick *C. auris* colonized patients detection.

*High pure PCR template preparation kit (Roche)